DMCI

DRUG MANAGEMENT FOR CHILDHOOD ILLNESS: DATA COLLECTOR'S GUIDE

Douglas Keene
Thomas Moore

September 2000

USAID

BASICS

MSH Management Sciences for Health

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CONTENTS

ACRONYMS

AMR ..... antimicrobial resistance
ARI ..... acute respiratory infection
BASICS ..... Basic Support for Institutionalizing Child Survival [Project]
BCG ..... Bacillus Calmette-Guerin
CHD ..... Child Health and Development [WHO]
CIF ..... cost, insurance, and freight
CMS ..... Central Medical Stores
DAS ..... Drug Availability Study
DMCI ..... Drug Management for Childhood Illness
DPT ..... diphtheria, pertussis, and tetanus
DUS ..... Drug Use Study
EDL ..... essential drugs list
EDP ..... Essential Drugs Programme
EPI ..... Expanded Programme on Immunizations
FOB ..... free on board
ICD-9 ..... International Classification of Diseases 9th Edition
IM ..... intramuscular
IMCI ..... Integrated Management of Childhood Illness
IV ..... intravenous
LA/C ..... Latin America and the Caribbean
MOH ..... Ministry of Health
MSH ..... Management Sciences for Health
NDF ..... national drug formulary
NGO ..... nongovernmental organization
OPV ..... oral polio vaccine
ORS ..... oral rehydration salts
OTC ..... over the counter
PAHO ..... Pan American Health Organization
RMS ..... Regional Medical Stores
RPM ..... Rational Pharmaceutical Management [Project]
RPM ..... respirations per minute
SC ..... subcutaneous
STG ..... standard treatment guidelines
UNICEF ..... United Nations Children's Fund
USAID ..... U.S. Agency for International Development
VVM ..... vaccine vial monitor
WHO ..... World Health Organization

Chapter 1.

INTRODUCTION

The *Drug Management for Childhood Illness (DMCI) Manual: Data Collector's Guide* will help data collectors identify, collect, and record data needed for DMCI studies. The *Guide* includes information on data collection techniques and the workplan for data collectors, as well as information on completing the forms that will be used in the field. This *Guide* also contains definitions of terms, examples of the proper way to fill out each form, and a list of typical problems encountered in data collecting and their possible solutions.

The IMCI Concept

The Integrated Management of Childhood Illness (IMCI) is a health promotion strategy designed to significantly reduce global mortality and morbidity associated with major causes of disease in children. IMCI also promotes the healthy growth and development of children. The core interventions of IMCI are case management of the five most important causes, globally, of childhood deaths: acute respiratory infection (ARI), diarrhea, malaria, malnutrition, and measles as well as other commonly associated conditions. The strategy also includes selected preventive interventions and recognizes the importance of maternal health. IMCI aims to improve practices in health facilities and in the home.

In 1995, the World Health Organization's Department of Child Health and Development (WHO/CHD) and the United Nations Children's Fund (UNICEF) produced a series of training modules to teach the integrated management process to health workers who treat sick children. The training series includes a model set of integrated standard treatment guidelines (STG) that incorporate a region's disease-specific guidelines. To implement IMCI at the country level,

WHO recommends that each country identify necessary adaptations of the model guidelines to fit country-specific requirements.

WHO/CHD began implementation of IMCI in 1996. In support of the global implementation of IMCI, WHO and UNICEF have acknowledged the need for ongoing research to better understand country-level issues concerning IMCI implementation. As part of its research agenda, WHO/CHD has identified three components that form the framework for the implementation of the IMCI strategy. These include:

- improvement of the case management skills of health staff in management of childhood illness;
- improvement in the health system needed to allow effective management of childhood illness; and
- improvement of family and community practices.

WHO/CHD has identified the fact that improving the supply and management of essential drugs and vaccines is a critical part of improving health systems.

To address issues of the essential drugs, supplies, and vaccines needed for IMCI, the Rational Pharmaceutical Management (RPM) project, in collaboration with U.S. Agency for International Development (USAID), the USAID-funded Basic Support for Institutionalizing Child Survival (BASICS) project, and the Pan American Health Organization (PAHO), developed the *DMCI Manual*, an indicator-based assessment tool. Following field testing in Latin America, the DMCI tool was adapted to the African context with assistance from WHO/AFRO.

The *DMCI Manual* is designed to guide the review of drug availability and rational use of drugs for IMCI in drug retail outlets and in the health facilities of the Ministry of Health (MOH). The *Data Collector's Guide* is the companion document to the *DMCI Manual*. The *Guide* provides step-by-step instructions for collecting the data necessary for reviewing aspects of drug management systems that are essential for the successful implementation of IMCI programs.

Methodology and Purpose

The *DMCI Manual* and the *Data Collector's Guide* use objective measures, called indicators, to assess the functions of drug management systems for IMCI. The indicator-based methodology uses retrospective and prospective techniques to collect qualitative and quantitative data and identify strengths and weaknesses in drug systems. (See list of indicators in Annex 4.) The *DMCI Manual* and the *Guide* build on two complementary studies, the "Drug Availability Study" and the "Drug Use Study."

The purpose of the Drug Availability Study is to determine the degree to which the drugs, vaccines, and supplies required for treating and preventing common childhood illnesses are

available. This study will use three data collection techniques: document reviews, structured interviews, and physical inventory checks. Data will be collected from MOH health facilities.

The purpose of the Drug Use Study is to review prescribing and dispensing practices for IMCI health problems and assess their clinical and cost implications. The DUS will use retrospective (i.e., historical) and prospective (i.e., current) data collection techniques. Retrospective data will be collected by reviewing medical records in MOH facilities. Prospective data will be collected through direct observation and exit poll interviews in MOH facilities as well as through simulated purchases and exit poll interviews in drug retail outlets.

Chapter 2.

TWO-PART STUDY APPROACH

The review of the drug management system is performed by studying two specific areas of the drug management system, drug availability and drug use.

Drug Availability Study (DAS)

Purpose The aim is to determine the degree to which the drugs, vaccines, and supplies required for treating and preventing common childhood illnesses are available.

Method Three data collection techniques will be used for this study: document reviews, key informant interviews, and physical inventory checks.

Sites Data collection sites will include MOH central offices, central and regional medical stores, and health facilities.

Drug Use Study (DUS)

Purpose The aim is to review prescribing and dispensing practices for selected health problems and assess their clinical and cost implications.

Method The DUS will use both retrospective and prospective data techniques. Retrospective (i.e., historical) data will be collected by reviewing medical records in MOH health facilities. Prospective (i.e., current) data will be collected through direct observation of health workers, exit poll interviews of caregivers, and simulated purchases.

Sites The retrospective data will be collected in MOH facilities. The prospective data will be collected in MOH facilities and drug retail outlets.

DMCI Tracer List of Drugs, Vaccines, and Supplies

A "tracer product list" was compiled for this study, and some of the data will be collected on the products in this list of selected drugs, vaccines, and essential supplies. The list is based on the drugs and supplies recommended in the IMCI treatment algorithm, which contains specific recommendations concerning treatment for children two months to five years old for common health problems.

In this study, the DMCI tracer product list will be used at the central, regional, health facility, and retail levels to collect data for inventory management and price indicators. The sample list below should be adapted to country-specific settings.

The sample DMCI tracer list contains the following products:

1. Oral rehydration salts (ORS)
2. Co-trimoxazole tab 20/100 mg
3. Co-trimoxazole syrup 40/200 mg per 5 ml
4. Amoxicillin tab 250 mg
5. Amoxicillin syrup 125 mg per 5 ml
6. Chloramphenicol IM 1000 mg in 5 ml sterile water
7. Gentamicin IM 20 mg per 2 ml vial
8. Benzylpenicillin 1,000,000 IU
9. Nalidixic acid tab 250 mg
10. Erythromycin tab 250 mg
11. Chloroquine tab 150/100 mg base
12. Sulfadoxine/Pyrimethamine tab 500/25 mg (Fansidar)
13. Quinine IM 300 mg/ml
14. Mebendazole tab 100 mg
15. Iron folate tab 200/0.25 mg
16. Iron suspension 20 mg/ml
17. Gentian Violet solution
18. Tetracycline ophthalmic ointment 1%
19. Vitamin A drops 5000 IU/0.1 ml
20. Paracetamol tab 100 mg
21. Paracetamol syrup 24 mg/ml
22. Ringer's lactate or normal saline
23. Oral polio vaccine (OPV)
24. Measles vaccine
25. DPT vaccine
26. BCG vaccine
27. Syringe and needle
28. Thermometer
29. IV sets
30. Nasogastric tubes
31. Weighing scale

Role of Data Collectors

The data collectors are responsible for gathering information from MOH offices and facilities and from drug retail outlets. This work is best performed by data collectors who have some knowledge or experience in medicine, pharmacy, or nursing. Such a background is needed to adequately manage data on drugs and to be familiar with the organization of local health systems.

In addition, data collectors should have skills in interpersonal communication so they can interact effectively with health providers. They must also be flexible enough to adapt the data collection process to a variety of sites.

Another responsibility of data collectors is to obtain data that are of the highest quality and reliability. The calculations of indicators is based on the data collected; therefore, the data required, if available, must be collected completely. Data collectors must pay close attention to detail in the data and fill out forms in ink. The completed forms must be legible to the study coordinator and to data entry personnel.

Following is the format of a four-day training workshop. The topics are intended to ensure that data collectors have the knowledge and skills needed to collect the data. The workshop addresses each aspect of the data collection process and provides opportunities for data collectors to practice these skills in the field.

Role of Team Managers

Depending on the context (size of region, number of data collectors, etc.), it may be useful to build a team of managers. The team managers should meet at least one day in advance of the training in order to:

- Be briefed on all aspects of the study (background, objectives, methods)
- Review role and responsibilities of the team managers (these should be written)
- Review assignments of sites and data collectors
- Review training program

To carry out both the Drug Availability and Drug Use Studies, a team of at least three or four data collectors (with one person serving as team manager) is needed, particularly for the observation and exit interviews in health settings. For example, one option for a three-member team division of data collection responsibilities in a health facility is as follows:

One person is team manager. (S)he preselects patients that match the investigated diseases and reviews the checklists for completeness. Another data collector observes the consultation of the preselected patients, and the third one conducts the exit interview with the same patients. The

team manager can collect the availability data and interview the clinic staff on standard treatments while the two other surveyors collect simulated purchase data at the drug retail outlet.

The team managers are preferably selected by the coordinator of the study and are usually senior personnel who have extensive knowledge of the health system or who have worked or are still working in health facilities. The decision to have data collection teams of three or four people should depend on the country-specific situation and should be determined by the study coordinator.

Training Plan for Data Collectors

Day	Training Activities	Time
1	1. Opening—Introduction of the data collectors 2. General presentation: • purpose of the survey: to document drug availability and drug use for IMCI health problems • training objectives: to familiarize data collectors with survey questionnaires and data collection techniques • introduction of the *Data Collector's Guide* • where to collect data: health facilities and drug retail outlets • data collection techniques to use: direct observation, interviews, simulated purchases, record reviews • discuss data collectors' expectations or concerns 3. Work schedule and compensation 4. Location of sites to be surveyed	1-2 hours
	5. Review survey form DAS-1: General Data Collection Preparation Checklist 6. With the remaining survey forms grouped according to where data are to be collected, review them one by one as follows: <u>Central Medical Stores/Regional Medical Stores</u> • DAS-2: Inventory Data Form • DAS-3: Stock-Out Data Form • DAS-4: Vaccine Data Form (optional) <u>MOH Health Centers</u> • DAS-2: Inventory Data Form • DAS-3: Stock-Out Data Form • DAS-4: Vaccine Data Form (optional) • DUS-1: Medical Records Review Form • DUS-2: Observation of Health Workers Data Form • DUS-3: Exit Poll Interview Form <u>Drug Retail Outlets</u> • DUS-4A: Simulated Purchase Form for No-Pneumonia (Cough and Cold) in Private Pharmacies • DUS-4B: Simulated Purchase Form for Diarrhea in Private Pharmacies • DUS-4C: Simulated Purchase Form for Malaria in Private Pharmacies	2-3 hours
	7. Central medical stores/regional medical stores visits: • practice filling out survey forms DAS-2, DAS-3, and DAS-4 (optional) • practice role play for forms DAS-2, DAS-3, and DAS-4 (optional) in small groups	2-3 hours

Day	Training Activities	Time
1	8. MOH health center visits: • practice filling out survey forms DAS-2, DAS-3, DAS-4 (optional), DUS-1, DUS-2, and DUS-3 • practice role play for forms DAS-2, DAS-3, DAS-4 (optional), DUS-1, DUS-2, and DUS-3 in small groups 9. Drug retail outlet visits: • practice filling out survey forms DUS-1, DUS-4A, DUS-4B, and DUS-4C • practice role play for forms DUS-4A, DUS-4B, and DUS-4C in small groups 10. Discuss policy of patient confidentiality	2-3 hours
2	1. Practice how to draw a sample of patient encounters from health facility records 2. Visit predetermined health center and collect a complete set of data using survey forms: DAS-2, DAS-3, DAS-4 (optional), DUS-1, DUS-2, and DUS-3	1 hour 5-6 hours
3	1. Debrief on health center practice visits: critique performances and troubleshoot problems 2. Discuss revisions of forms if revisions are necessary as a result of the practice visits 3. Role play in small groups—check reliability (quality) of data collector knowledge, skills, and abilities for filling in the data collection forms Visit predetermined drug retail outlet and collect a complete set of data using DUS-1 (prices), DUS-4A, DUS-4B, and DUS-4C	3-4 hours 2-3 hours
4	1. Debrief on drug retail outlet practice visits: critique performance and troubleshoot problems 2. Discuss revision of forms if revisions are necessary as a result of the practice visits 3. Role play in small groups—check reliability (quality) of data collector knowledge, skills, and abilities for filling in the data collection forms 4. Assign data collectors to teams and appoint team manager for each team 5. Discuss purpose of regular team meetings during data collection: to discuss successes, problems, and how to overcome data collection problems 6. General review and open questions	1-2 hours 3-4 hours

Day	Training Activities	Time
4	7. Review supervisory role with all team managers • periodic observation of data collectors • ensure completeness of data collection forms before leaving the facility • how to fill out shaded areas of data collection forms and establish standardized coding for identifying individual data collectors, patient records, encounters, etc. • how to select an alternate health center when one becomes inaccessible to data collectors • cleaning up data forms before data analysis	4-5 hours

Chapter 3.

SUMMARY OF INSTRUCTIONS FOR COMPLETING DATA FORMS

Data collectors need to know:

- **Where to go:** The specific site for each data form
- **Whom to ask:** The specific personnel from whom to solicit data
- **What to get:** Data from specific sources using specific techniques: review of records, observation, interview, or simulated purchases
- **Instructions:** Defines the terms used in the forms and provides details on how to fill out each specific data form

Data collectors must understand the purpose of the forms, be familiar with each form's data techniques, and be aware of the sequence in which they will be used:

Form	Purpose of the Form
DAS-1	To serve as a checklist to ensure that all items are available before starting data collection
DAS-2	To collect data on stock inventory to review the quality of inventory management (number of non-expired products, physical count of inventory)
DAS-3	To collect data on the status of out-of-stock DMCI tracer products
DAS-4	To collect data on the management of cold chain and vaccine stock (optional)
DUS-1	To collect data on prescribing practices (retrospectively, from review of medical records)
DUS-2	To collect data on the quality of certain aspects of the medical consultation
DUS-3	To collect data on the level of understanding the caregiver has on how to care for a sick child, and to collect data on the quality of dispensing practices
DUS-4A, 4B, 4C	To collect data on the ability of retail drug sellers to manage (diagnose, prescribe, and dispense information and medication) for no-pneumonia (cough or cold), diarrhea, and malaria

Summary of Data Sites and Techniques

Study	Data Sites	Data Collection Techniques
Drug Availability Study	Ministry of Health Central Offices	Structured interviews and document review
	Ministry of Health/Central and Regional Medical Stores	Verifying physical inventories and review of records
	Health Facilities	Verifying physical inventories and review of records
Drug Use Study	Health Facilities	Review of patient medical records
		Simulated purchases
		Direct observation
		Exit interviews with caregivers
		Interviews with medical personnel
	Drug Retail Outlets	Simulated purchases

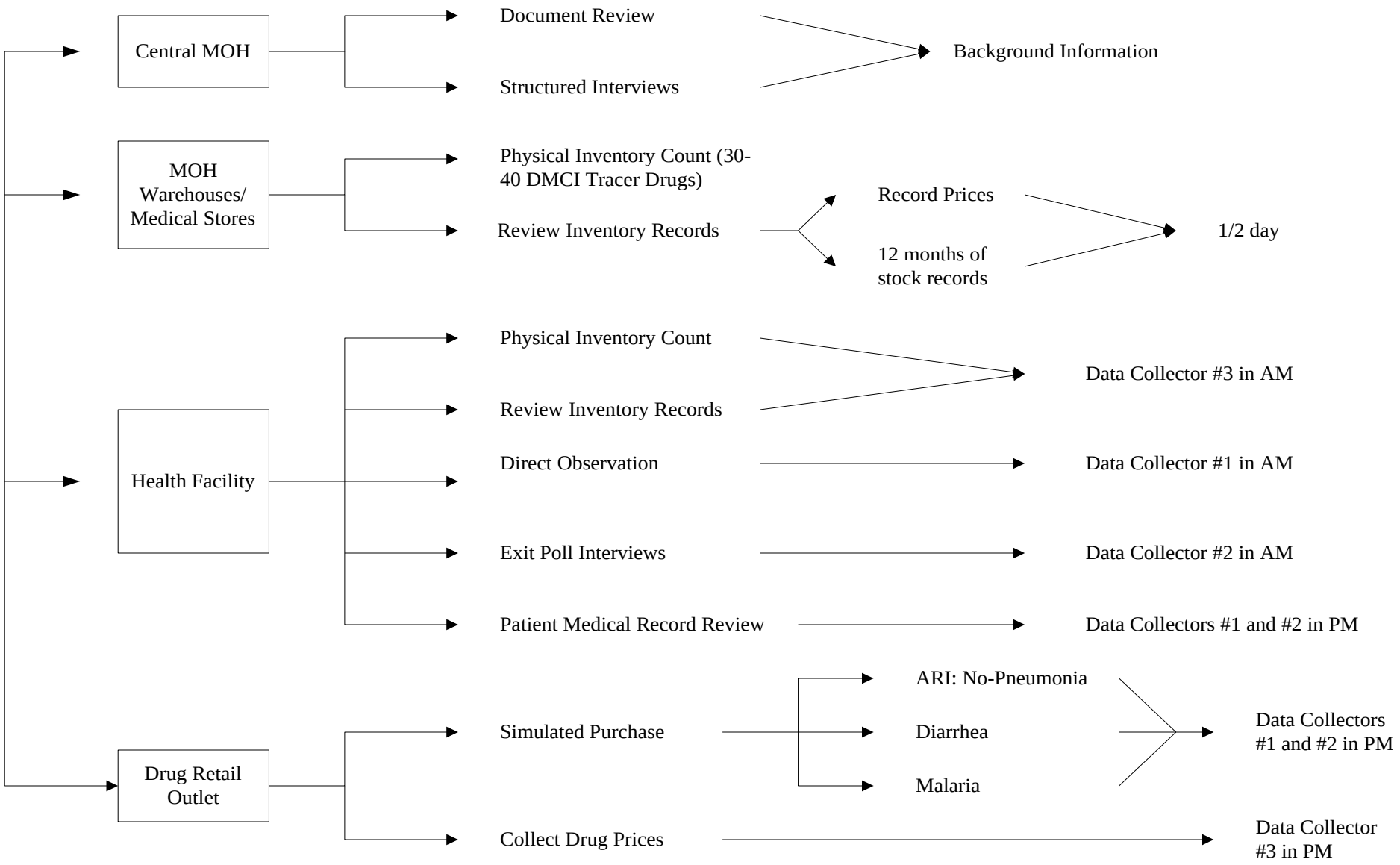
Following is a flow chart that depicts, graphically, the data collection process and the role of each data collection team member at each site. The numbers 1, 2, and 3 to the far right refer to the team of three data collectors and their possible roles in the morning (AM) and afternoon (PM).

Before the study, organizers should discuss and reach consensus on a list of local terms used to describe symptoms that may be listed in health facility records to denote cases of each of the study health problems. Annex 1. Acceptable Terms for Diagnosing Diarrhea, Pneumonia, No-Pneumonia, and Malaria can be used to record agreed upon terms to look for to indicate a case of each study health problem.

Likewise before the study, organizers should develop a list of which medications are to be counted as antibiotics. Annex 2. List of Equivalent Drugs (Brand and Generic) can be used to record the final list. (To avoid confusion or the need for interpretation by data collectors, all drugs prescribed should be transcribed exactly as listed in the patient record to the data collection forms.)

Annex 3. Medical Record Selection Form is intended to help data collectors keep track of the medical record selection process in each facility. As described earlier, at least three medical records per month for the IMCI health problem under study should be selected, for the most recent 12 months prior to the time of the study. Start with the most recent full month and work backwards (e.g., October 1998, September 1998, August 1998, etc.). Annex 3 can be used to record the code for each medical record selected.

Figure 2. DMCI Data Collection Process Flow Chart



Scripts (Sample Explanations)

Purpose of the Scripts

If you encounter skepticism and/or reluctance from health workers at health facilities or retail drug outlets because personnel are not fully informed about the DMCI study, be prepared to explain the purpose of the visit and why you need the cooperation of the health workers or retail drug outlet personnel. Be prepared, also, to explain why you need the information.

To help in such situations, you may use a script, a sample explanation, as in the examples below. These scripts are for example only, and should be adapted to the needs and context of the country-specific setting. Use of the scripts will also help ensure that each team uses the same explanation.

Sample Script Number One:

Use the script when presenting yourselves in central and regional medical stores or EPI offices.

The Ministry of Health, WHO, USAID, and other international organizations are reviewing the status of care for children two months to five years old. This age group is of interest because the Integrated Management of Childhood Illness (IMCI) strategy is being implemented in several areas of the country. This program requires the use of specific drugs, supplies, and vaccines. To prepare for the expansion of IMCI to the rest of the country (or to review the progress of implementation), it is important for the MOH to know which drugs, supplies, and vaccines are currently available and how they are being used.

The central and regional medical stores are included in the study to help us understand the operation of the drug management system. We are data collectors (give names), and we need to work here today. We would like to ask for your cooperation so that we can complete the following tasks:

1. Collect inventory data for certain drugs, vaccines, and supplies needed for IMCI.

2. Collect stock-level data for the products.

Sample Script Number Two:

Use the script when presenting yourselves in health centers.

The Ministry of Health, WHO, USAID, and other international organizations are assessing the quality of care for children two months to five years old. This age group is of interest because the Integrated Management of Childhood Illness (IMCI) strategy is being implemented in several areas of the country. The program requires the use of specific drugs, supplies, and vaccines. To

prepare for the expansion of IMCI to the rest of the country or to review the progress of implementation, the MOH must know the availability of drugs, supplies, and vaccines and the problems of the medical personnel.

This center (or subcenter or hospital) was selected randomly, and the data that we collect will remain confidential. No individual names will be used in the study. We are a team of three data collectors that will work here today (give names). We would like you and your staff to help us complete the following tasks:

1. *Review the stock of drugs and vaccines in the center's pharmacy.*
2. *Review the medical records of patients two months to five years old whose chief complaints were diarrhea, respiratory infections, or malaria.*
3. *Observe the medical consultations of patients in the age group who are at the center for curative consultations.*
4. *Interview the center's medical staff to understand their prescribing practices for diarrhea, acute respiratory infections, and malaria.*
5. *Interview caregivers to find out which drugs they will give their children and to review the dispensing practices in the center.*

We would also like to have a list of your medical staff to invite them to the formal presentation of the study's results. Thank you very much for your help.

Sample Script Number Three:

Use the script when collecting data on prices for IMCI drugs in drug retail outlets.

The Ministry of Health is conducting a study to see which drug products that are essential to the care of sick children are available in the community. Sometimes, these products are unavailable in _____ (name of the nearest health clinic in which the data are collected). When the drugs are unavailable in the clinic, many caregivers of patients will go to private pharmacies. Therefore, we would like to know which products you have for sale. If doctors know which drugs are available in pharmacies, they will be able to prescribe more appropriately.

Do many patients from _____ come here?
(name of nearest clinic in which data are collected)

Could you please give me the price on some drugs that you have for sale? Thank you very much.

Chapter 4.

DRUG AVAILABILITY STUDY FORMS

This chapter contains the data collection forms and instructions necessary for collecting information for the Drug Availability Study.

DAS-1: General Data Collection Preparation Checklist

Each data collector or data collection team will need all of the following items before starting the actual collection of data. The study coordinator or supervisor will likely provide these items. Check (✓) each item as you receive it.

ITEM	COLLECTED ✓
1. List of data collection teams and the sites to be visited	
2. Workplan and timeline by data collection teams	
3. Samples of information source documents (e.g., clinic record or medical chart, stock cards, bin cards, etc.)	
4. List of medical terms and symptoms used locally for diagnosing study health problems (i.e., diarrhea, pneumonia, measles, etc.)	
5. List of equivalent drug names (brand and generic)	
6. Contact information for data collectors	
7. Copies of Letters of Authorization or Introduction	
8. Set of data collection forms	
9. Pens and other supplies	
10. Per diem for local expenses	

DAS-2: Inventory Data Form

This form is used for the indicators listed below:

3. Average percentage of a set of unexpired DMCI tracer drugs available in MOH storage and health facilities

5. Average percentage of stock records that correspond with physical counts for a set of DMCI tracer drugs in MOH storage and health facilities

   For indicators 3 and 5, data are collected during a physical inspection of the drug products. Other data are collected from any or all of the computerized stock record-keeping systems, manual stock ledgers, or stock record cards and bin cards.

6. Percentage of MOH storage and health facilities visited that have a working refrigerator with freezing compartment and thermometer for vaccine storage

7. Percentage of MOH storage and health facilities with up-to-date refrigerator temperature monitoring records

Data Summary:

Where to Go	*Whom to Ask*	*What to Get*
Central Medical Stores	Inventory Officer/ Storekeeper	Data from inventory records and stock count for DMCI tracer drugs Data about the condition of the refrigerators in each of these facilities Check to see if the refrigerator is working and if it has a freezing compartment and a thermometer
Regional Medical Stores	Manager/Storekeeper	
20 MOH health facilities	Dispenser/Pharmacist/ Storekeeper	

General Instructions for Filling Out Data Forms:

Facility Name: Write the name of the health facility or warehouse in which the data are being collected.

Data Collector Code: Write your identification code. Codes will be assigned during data collector training.

Facility Type: Write the type of facility in which you collect the data, for example, warehouse, district hospital, health center, or health post.

Location: Write the name of the geographic location of the facility, usually the name of a region, province, district, city, or town.

Date: Write the date on which you collect the data. At each facility, the data should be collected in one day, if possible.

Data collected from: For each facility, check the type of inventory control system that you used to collect the data.

Cold Chain Table: The name of each row in the Cold Chain Table is in **bold** below.

Refrigerator/freezer/thermometer functioning: Check *YES* if the health facility has a working refrigerator with a freezing compartment and thermometer. Check *NO* if the facility does not have a working refrigerator with a freezing compartment and a thermometer.

Definition of a Working Refrigerator: To qualify as a working refrigerator, it must have a working thermometer and a main compartment that keeps vaccines at temperatures from 2°C to 8°C. It must also have a freezer that maintains temperatures below 0°C.[1]

Storage conditions appropriate: Check *NO* if the refrigerator contains products other than vaccines or insulin. The refrigerator should not contain food, drinks, or laboratory samples. If food and vaccines are stored in the same refrigerator, the vaccines are inappropriately stored. If a health facility has more than one refrigerator, the facility should be judged by the condition of the refrigerator that is used to store vaccines. If more than one refrigerator is used to store vaccines and *only* vaccines, indicate if the storage conditions for vaccines in both refrigerators are appropriate.

Cold packs/cold boxes/portable ice boxes in good condition: Check *YES* if the health facility has cold boxes or cold packs that are adequate for the storage and transportation of drugs and vaccines. To be adequate, the cover of the cold boxes should be airtight. To see if the cold boxes are airtight, the data collector should verify that the rubber seals of

[1]James E. F. Reynolds, ed., *MARTINDALE: The Extra Pharmacopoeia.* Thirteenth Edition (London: The Pharmaceutical Press, 1993).

the covers have not hardened. To be adequate, the cold boxes should also have a mechanism to prevent the cover from opening accidentally during transport. Check *NO* if the cold boxes or cold packs are inadequate.

Temperature monitoring charts up to date: Check *YES* if the health facility's temperature charts for the refrigerator and freezer are up to date (temperature is recorded every working day for the month before the day of data collection). Check *NO* if the health facility does not have charts or if the charts are not up to date.

Instruction for Filling Out Form DAS-2:

The name of each column on the form is in **bold** below. The numbers correspond to the column numbers on the data form.

1. **Product:** The study's list of DMCI tracer products should be preprinted in *Column 1*. Each tracer product should include the generic name, dosage form, and strength.

2. **Counting Unit:** In *Column 2*, indicate the smallest unit by which the product is counted, for example, tablets or milliliters.

3. **Record Count:** In *Column 3*, write the record system's count of the units in stock.

4. **Recent Receipts:** Posting of recent receipts is not always up to date. After the record's count of each tracer product has been entered, ask the store manager to add up the unposted receipts. Enter the results in *Column 4*.

5. **Recent Issues:** It is also often the case that recent issues of stock have not been posted. (The term "recent" in both columns 4 and 5 should be defined locally. Three months is a good estimate.) Ask the store manager about stocks issued but not yet entered in the log book. For each of the tracer products, add unposted issues of stock after the record-keeping tally has been entered. Enter the results in *Column 5*.

7. **Physical Count:** For each tracer product, take a physical count of the number of units actually present. Do not open closed containers. The amount present in open containers should be estimated. Write the results in *Column 7*.

8. **Expired Stock:** Check the expiration date of each tracer product in stock that has an expiration date. In *Column 8*, write the number of units that have expired as of the day of the data collection. Write *0* in this column if there are no expired products. Write *N/A (not available)* if the product does not have an expiration date.

   Note: ALL unshaded blanks should be filled in on this data form. Enter *N/A* if data for a particular item are not available.

INSTRUCTIONS FOR TEAM MANAGER'S SECTIONS

The team manager for each data collection team will complete the shaded portions of form DAS-2 as follows:

Column 6: *Column 6* equals the adjusted total (system's record count *plus* recent receipts *minus* recent issues of stock). For each tracer product, make the following calculation, and enter the results in *Column 6*:

Adjusted Total = Record Count + Recent Receipts - Recent Issues

(Column 6) = (Column 3) + (Column 4) - (Column 5)

Column 9: For each drug, calculate the *Percentage Expired* by dividing the amount of *Expired Stock* recorded in *Column 8* by the *Physical Count* quantity recorded in *Column 7* and multiply by 100.

Example on form: $\frac{15}{755}$ x 100 = 1.98%

Shaded Row 1: Observe the numbers recorded in *Columns 6* and *7*. Count the number of products where the number in *Column 6* exactly equals the number in *Column 7*. Write the total number to the far right of *Row 1*.

Shaded Row 2: Count the total number of products from *Column 1* that are stocked in the facility and use the number to calculate the *Percentage of Records Corresponding with Physical Counts* as follows: Take the number you recorded in *Row 1*, multiply by *100* and divide by the total number of products from *Column 1* that are stocked in the facility that you just counted. Record the percentage to the far right of *Row 2*.

Shaded Row 3: To get an average of the percentage of expired products for the facility, sum the numbers in *Column 7* and the numbers in *Column 8* and divide the *Column 8* total by the *Column 7* total. Multiply the result by 100 to convert the result to a percentage.

DAS-2: Inventory Data Form [page 1 of 2]

Facility Name:	**Data Collector Code:**	
Facility Type:	**Location:**	**Date:**

Data collected from:

Computer System ? Manual Ledger ? Stock Record Cards ? Tally Sheets ?

Cold Chain Table			
Refrigerator/freezer/thermometer functioning?	YES ? NO ?	Cold packs/cold boxes/portable ice boxes in good condition?	YES ? NO ?
Storage conditions appropriate?	YES ? NO ?	Temperature monitoring charts up to date?	YES ? NO ?

Product	**Counting Unit**	**Record Count**	**Recent Receipts**	**Recent Issues**	**Adjusted Total**	**Physical Count**	**Expired Stock**	**Percent Expired**
Col. 1	**Col. 2**	**Col. 3**	**Col. 4**	**Col. 5**	**Col. 6**	**Col. 7**	**Col. 8**	**Col. 9**
1. Oral rehydration salts (ORS)	Packet	783	100	34	849	755	15	1.98
2. Co-trimoxazole tab 20/100 mg								
3. Co-trimoxazole syrup 40/200 mg per 5 ml								
4. Amoxicillin tab 250 mg								
5. Amoxicillin syrup 125 mg per 5 ml								
6. Chloramphenicol IM 1000 mg in 5 ml sterile water								
7. Gentamicin IM 20 mg per 2 ml vial								
8. Benzylpenicillin 1,000,000 IU								
9. Nalidixic acid tab 250 mg								
10. Erythromycin tab 250 mg								
11. Chloroquine tab 150/100 mg base								
12. Sulfadoxine/Pyrimethamine tab 500/25 mg (Fansidar)								
13. Quinine IM 300 mg/ml								
14. Mebendazole tab 100 mg								

DAS-2 [page 2 of 2] | **Facility Name:** | **Data Collector Code:**

Product	Counting Unit	Record Count	Recent Receipts	Recent Issues	Adjusted Total	Physical Count	Expired Stock	Percent Expired
Col. 1	**Col. 2**	**Col. 3**	**Col. 4**	**Col. 5**	**Col. 6**	**Col. 7**	**Col. 8**	**Col. 9**
15. Iron folate tab 200/0.25 mg								
16. Iron suspension 20 mg/ml								
17. Gentian Violet solution								
18. Tetracycline ophthalmic ointment 1%								
19. Vitamin A drops 5000 IU/0.1 ml								
20. Paracetamol tab 100 mg								
21. Paracetamol syrup 24 mg/ml								
22. Ringer's lactate								
23. Oral polio vaccine (OPV)								
24. Measles vaccine								
25. DPT vaccine								
26. BCG vaccine								
27. Syringe and needle								
28. Thermometer								
29. IV sets								
30. Nasogastric tubes								
31. Weighing scale								
Row 1: Total # products where Col. 6 equals Col. 7:								
Row 2: % of records corresponding with physical counts: # Row 1 x 100 ¸ # products stocked in Col. 1:								
Row 3: % of expired products:								

DAS-2: Use with indicators 3, 5, 6, and 7. Data collectors should not fill out the shaded rows or columns.

DAS-3: Stock-Out Data Form

This form is used for the indicator listed below:

4. Average percentage of time out of stock for a set of DMCI tracer drugs in MOH storage and health facilities

Collect data for this indicator on each tracer product. Use data from each facility's stock record keeping system, whether computerized or manual. Systems based on ledgers or stock record cards, for example, are manual systems.

Data Summary:

Where to Go	*Whom to Ask*	*What to Get*
Central Medical Stores	Inventory Officer/ Storekeeper	Drugs on the tracer list that are usually stocked Number of days that each usually stocked drug was out of stock during the 12 months prior to data collection (or during the previous year)
Regional Medical Store	Manager	
20 MOH health facilities	Dispenser/Pharmacist/ Storekeeper	

General Instructions for Filling Out Data Forms:

Facility Name: Write the name of the health facility or warehouse in which the data are being collected.

Data Collector Code: Write your identification code. Codes will be assigned during data collector training.

Facility Type: Write the type of facility in which you collect the data, for example, warehouse, district hospital, health center, or health post.

Location: Write the name of the geographic location of the facility, usually the name of a region, province, district, city, or town.

Date: Write the date on which you collect the data. At each facility, the data should be collected in one day, if possible.

Instruction for Filling Out Form DAS-3:

The name of each column on the form is in **bold** below.

Product: The study's list of DMCI tracer products should be preprinted in *Column 1*. Each tracer product should include the generic name, dosage form, and strength.

Columns for the Months (and Reference Year): Preprinted abbreviations of the month, the number of days in the month, and a space for the last two digits of the year are at the top of each column. The number of days are to facilitate counting how many days in the month the product was out of stock. The months should be adjusted to coincide with the 12 months preceding the one in which the data are being collected. Fill in the years accordingly. For each tracer product and each of the 12 months, write the number of days that the product was out of stock.

Total Days Out of Stock: In this column, sum for each product the total number of days in the 12-month period that each product was out of stock. In other words, in each row, add up the numbers in the 12 columns and enter the total in the far right column.

Note: ALL unshaded blanks should be filled in on this data form. Enter *N/A* if data for a particular item are not available.

INSTRUCTIONS FOR TEAM MANAGER'S SECTIONS

The team manager for each data collection team will complete the shaded portions of form DAS-3 as follows:

Shaded Row 1: Sum the numbers in the *Total Days Out of Stock* column and place the total sum to the far right of *Row 1*.

Shaded Row 2: Count the total number of products listed in *Column 1* that are stocked in the facility. Record this number to the far right of *Row 2*.

Shaded Row 3: Calculate the *Average percentage of time out of stock for a set of DMCI tracer drugs* according to the following formula and record to the far right of *Row 3*:

$$\text{Average \% time out of stock} = \frac{\text{number in } \textit{Row 1} \times 100}{365 \times \text{number in } \textit{Row 2}}$$

DAS-3: Stock-Out Data Form [page 1 of 2]

Facility Name:	**Data Collector Code:**	
Facility Type:	**Location:**	**Date:**

For each product, write the number of days out of stock for each month.

Product	**Jan 31** 99	**Feb 28** 99	**Mar 31** 99	**Apr 31** 99	**May 31** 99	**Jun 30** 99	**July 31** 99	**Aug 31** 98	**Sep 30** 98	**Oct 31** 98	**Nov 30** 98	**Dec 30** 98	**Total Days Out of Stock**
1. Oral rehydration salts (ORS)	0	0	1	0	0	5	0	3	2	0	0	0	11
2. Co-trimoxazole tab 20/100 mg													
3. Co-trimoxazole syrup 40/200 mg per 5 ml													
4. Amoxicillin tab 250 mg													
5. Amoxicillin syrup 125 mg per 5 ml													
6. Chloramphenicol IM 1000 mg in 5 ml sterile water													
7. Gentamicin IM 20 mg per 2 ml vial													
8. Benzylpenicillin 1,000,000 IU													
9. Nalidixic acid tab 250 mg													
10. Erythromycin tab 250 mg													
11. Chloroquine tab 150/100 mg base													
12. Sulfadoxine/Pyrimethamine tab 500/25 mg (Fansidar)													
13. Quinine IM 300 mg/ml													
14. Mebendazole tab 100 mg													

DAS-3 [page 2 of 2] | **Facility Name:** | **Data Collector Code:**

Product	Jan 31 99	Feb 28 99	Mar 31 99	Apr 31 99	May 31 99	Jun 30 99	July 31 99	Aug 31 98	Sep 30 98	Oct 31 98	Nov 30 98	Dec 30 98	Total Days Out of Stock
15. Iron folate tab 200/0.25 mg													
16. Iron suspension 20 mg/ml													
17. Gentian Violet solution													
18. Tetracycline ophthalmic ointment 1%													
19. Vitamin A drops 5000 IU/0.1 ml													
20. Paracetamol tab 100 mg													
21. Paracetamol syrup 24 mg/ml													
22. Ringer's lactate													
23. Oral polio vaccine (OPV)													
24. Measles vaccine													
25. DPT vaccine													
26. BCG vaccine													
27. Syringe and needle													
28. Thermometer													
29. IV sets													
30. Nasogastric tubes													
31. Weighing scale													
Row 1: Sum total days out of stock for all stocked drugs:													
Row 2: Count total # products stocked in Column 1:													
Row 3: Average % time out of stock = (# Row 1 x 100) ¸ (365 x # Row 2):													

DAS-3: Use with indicators 3 and 5. Data collectors should not fill out the shaded rows.

DAS-4: Vaccine Data Form (Optional)

Data Summary:

Where to Go	*Whom to Ask*	*What to Get*
Central Medical Stores	Inventory Officer/ Storekeeper	Review the vaccine registries to collect data on vaccine inventory and use
Regional Medical Store	Manager/Storekeeper	
MOH health facilities	Dispenser/Pharmacist/ Storekeeper	

General Instructions for Filling Out Data Forms:

Facility Name: Write the name of the health facility or warehouse in which the data are being collected.

Data Collector Code: Write your identification code. Codes will be assigned during data collector training.

Facility Type: Write the type of facility in which you collect the data, for example, warehouse, district hospital, health center, or health post.

Location: Write the name of the geographic location of the facility, usually the name of a region, province, district, city, or town.

Date: Write the date on which you collect the data. At each facility, the data should be collected in one day, if possible.

Instructions for Filling Out Form DAS-4:

Routine EPI: Determine whether the inventory is part of the routine EPI program. Write *YES* only if the inventory stock of vaccines is used for routine immunizations in the health center. Write *NO* if the inventory stock of vaccines in not used for routine immunization.

Special EPI Campaign: Write *YES* if the inventory is part of an EPI campaign which will be used during a specific time period. Also, write in the dates of the campaign. If the inventory is not part of such a campaign, write *NO*.

Vaccines Table: The name of each row in the Vaccines Table is in **bold** below. For each vaccine to be studied, record the following information.

Vaccine Category by Month: For each month, record the following information:

Inventory at the End of the Month: For this row, under the specific vaccine listed in each column, write the amount of inventory in stock for each vaccine at the end of each month. That is, write the number of doses available per vaccine. In the first column, write the month of the data shown in the blank.

Number of Recent Receipts: Write in the number of each vaccine, in number of doses, that the health facility received during the month.

Number Vaccinated: Write in the number of children vaccinated with each vaccine during the month. For DPT and oral polio vaccines, the number of children who received them in the month (i.e., children who received the first, second, and third doses of the vaccines) must be totaled. For example, if a health facility vaccinated 23 children for DPT1, 24 for DPT2 and 18 for DPT3 in a given month, the number of DPT vaccinations that month would be 65 (23+24+18). You would write *65* for the number vaccinated for DPT during the month.

Number Expired: Write the number of vaccines, in doses, that expired during the month.

Number Wasted: Write the number of vaccines, in doses, that deteriorated or were wasted during the month.

DAS-4: Vaccine Data Form [page 1 of 1] (Optional)

Facility Name:	**Data Collector Code:**	
Facility Type:	**Location:**	**Date:**
Routine EPI:	**Special EPI Campaign:**	

Vaccines Table					
Vaccine Category by Month	**Oral Polio Vaccine**	**Measles Vaccine**	**DPT Vaccine**	**Other** _____	**Other** _____
Inventory at end of the month _____					
Number of Recent Receipts					
Number Vaccinated					
Number Expired					
Number Wasted					
Inventory at end of the month _____					
Number of Recent Receipts					
Number Vaccinated					
Number Expired					
Number Wasted					

Troubleshooting

The key to successful data collection is good planning. However, no matter how thorough the planning, problems can always arise. Unexpected problems can be minimized if study team members maintain good, open communication and if participants remain flexible and willing to adapt to new situations. The table below presents a few typical problems, along with possible solutions. Remember, these examples are only illustrative. Each country can present data collectors with different problems.

Drug Availability Study: Illustrative Examples of Potential Problems and Possible Solutions

Potential Problems	Possible Solutions
The dosage form of the drug at the data collection site is different from the dosage form indicated on the sample data form.	The sample data forms should be adapted and tested, as outlined in Chapter 2 of the manual, to catch inconsistencies before data collection begins. However, if the form is different, change the form to reflect the dosage form found at the data collection site.
Health facility and drug retail managers are skeptical or resistant to permitting someone to go through confidential patient records.	Sometimes having an "official government letter of authorization" may not be enough. Talk to the managers about the study and emphasize its ultimate benefit to the country.
A sample facility is temporarily or permanently closed.	Have a defined "substitute" list of facilities ready in anticipation of closings. Do not wait until you get to the field site to make the decision on your own about selecting facilities.
Data forms are incomplete and/or illegible.	Be sure to use pens, not pencils, to fill out the forms. They may be checked later, and your pay may depend upon the legibility and completeness of your forms.

Chapter 5.

DRUG USE STUDY FORMS

This chapter contains the data collection forms and instructions necessary for collecting information for the Drug Use Study.

DUS-1: Medical Records Review Form

This form is used for the indicators listed below:

8. Percentage of MOH health facilities visited with an official manual of treatment guidelines for childhood illnesses, based on WHO IMCI treatment guidelines

9. Percentage of encounters diagnosed as no-pneumonia (cough or cold) that are prescribed antibiotics

10. Percentage of encounters diagnosed as pneumonia that are prescribed appropriate antibiotics, according to treatment guidelines

11. Percentage of encounters diagnosed as diarrhea that are prescribed ORS

12. Percentage of encounters diagnosed as diarrhea that are prescribed antidiarrheals

13. Percentage of encounters diagnosed as non-dysentery/non-cholera diarrhea that are prescribed antibiotics

14. Percentage of encounters diagnosed as malaria that are prescribed an appropriate oral antimalarial, according to treatment guidelines

15. Average cost of drugs prescribed as a percentage of costs if IMCI norms for treatment were followed

Data Summary:

Where to Go	***Whom to Ask***	***What to Get***
MOH health facilities	Medical Records Officer/ Health Facility Manager/ Pharmacist	1. A sample of 30 no-pneumonia encounters. 2. A sample of 30 pneumonia encounters. 3. A sample of 30 malaria encounters. 4. A sample of 30 diarrhea encounters.

General Instructions for Filling Out Data Forms:

Facility Name: Write the name of the health facility or warehouse in which the data are being collected.

Data Collector Code: Write your identification code. Codes will be assigned during data collector training.

Facility Type: Write the type of facility in which you collect the data, for example, warehouse, district hospital, health center, or health post.

Location: Write the name of the geographic location of the facility, usually the name of a region, province, district, city, or town.

Date: Write the date on which you collect the data. At each facility, the data should be collected in one day, if possible.

Instructions for Filling Out Form DUS-1:

Currency Used: Write in the currency used for the price data for DMCI tracer drugs.

One U.S. Dollar: Write in the exchange rate for a U.S. dollar in the currency used.

Selected for: Write in the name of the health problem for which the medical record was selected such as pneumonia, no-pneumonia, malaria, diarrhea, etc.

Data collected from: Check the appropriate box to designate whether the data were collected from medical records or patient registry.

Is an official manual of treatment guidelines available? Check the appropriate box to designate whether an official treatment manual is available. If a manual is available, write from what year.

Are IMCI guidelines available? Check the appropriate box to designate whether IMCI guidelines are available.

The name of each column on the form is in **bold** below. The numbers correspond to the column numbers on the data form.

1. **Encounter Number:** Write the patient's identification number. If no identification exists, simply number the encounter (patient) records that you studied *1, 2, 3,* etc.

2. **Age (months):** Write the actual age, in months, of the patient on the day of the medical consultation. For example, if the record showed that a girl, born December 2, 1994, was 26 months old when she had a consultation on February 2, 1997, you would write *26* in this column.

3. **Sex (M/F):** Write the patient's sex by writing an *M* for male or *F* for female.

4. **Diagnosis/Symptoms:** Write the diagnosis as determined by the prescriber. Write all the diagnoses in the medical record for each patient. If the diagnosis is unclear or missing, refer to the list of classifications of medical terms and write the diagnosis that matches the symptoms listed in the medical record, and write the symptoms on the data form. If the diagnosis was missing and entered by the data collector, circle the entry. This will help the study organizer to distinguish a prescriber's diagnosis from an entry by a data collector.

5. **Date:** Write the date that the prescriber saw the child. Indicate the month and year. For example, all the following dates, 28-10-97, 97-10-28, 28/10/97, 28 Oct 97, etc., would be written as 10/97.

6. **Prescriber Type:** Write the type of health facility staff that prescribed the medication, for example, physician, nurse, health worker, or other care provider. Abbreviations can be used in *Column 6* if specific abbreviations were agreed upon during the data collectors' training.

7. **Drug Name and Strength:** Write the name and strength of all prescribed drugs. Write the names exactly as they appear in the medical record. Also, write the drug's strength as written in the medical record. If strength is not written in the medical record, write *N/A* (*not available*) after the name of the medication. Use a new row for each drug.

8. **Dosage Form:** Write the dosage form of each prescribed drug as it appears in the medical record, for example, tablet, capsule, liquid, injectable, inhaler, cream, ointment, etc. If the dosage form is unclear or missing, write *N/A* (*not available*) in *Column 8*. Use a new row for each drug.

9. **Dosage Quantity:** Write the quantity or unit amount of each drug prescribed to be taken by the child, for example, 5 ml, 1 gm, 3 mg, 2 capsules, 2 inhalations, 1 tablet, etc. If the information cannot be found in the medical record, complete this item by interviewing the prescriber who treated the child. If the prescriber is not available, interview the medical head of the facility to complete this item. If the information on the form is a result of an interview (rather than directly from the medical record), circle it.

10. **Frequency (times per day):** For each drug prescribed, write how many times a day the dosage is to be given, for example, once a day, twice a day, three times a day, etc. If the information cannot be found in the medical record, complete this item by interviewing the prescriber who treated the child. If the prescriber is not available, interview the medical head of the facility to complete this item. If the information on the form is a result of an interview (rather than directly from the medical record), circle it.

11. **Duration of Treatment (days):** Write the number of days the prescribed drug is to be taken for a full course of treatment. The duration could be expressed as 5 days, 10 days, 30 days, etc. If the information cannot be found in the medical record, complete this item by interviewing the prescriber who treated the child. If the prescriber is not available, interview the medical head of the facility to complete this item. If the information on the form is a result of an interview (rather than directly from the medical record), circle it.

Note: ALL blanks should be filled in on this data form. Enter *N/A* if data for a particular item are not available.

Drug Price Data in Drug Retail Outlets (Columns 12 and 13)

The data for the remaining columns (*Column 12* and *13*) will be collected from drug retail outlets. Immediately upon leaving the health facility, go to the nearest private drug retail outlet. Ask the drug seller the price of each drug, and record the sales prices for each drug prescribed in *Column 7*.

Ask the drug seller the price of the smallest amount or quantity of the drug that he or she would dispense (e.g., one tablet, one packet, 30 ml, etc.) If a price for one full bottle is given, be sure to include the volume amount of the bottle. Do not purchase the product, merely ask for a price quote.

If an item is not stocked, skip that drug and go on to the next one. Where a drug retail outlet stocks more than one brand of the same product, record the name and price of the least expensive

product. For drugs that are repeated in *Column 7*, only record the price the first time it appears on the form.

Column 12: **Drug Retail Outlet Pack Size:** For each drug listed in *Column 7*, record the number of units that the drug seller would dispense in the drug retail outlet. The number of units should be for the smallest amount that the drug seller would dispense.

Column 13: **Drug Retail Outlet Pack Price:** For each drug listed in *Column 7*, record the selling price for the number of units the drug seller would dispense in the drug retail outlet.

DUS-1: Medical Records Review Form [page 1 of 1]

Facility Name:	**Data Collector Code:**	**Facility Type:**	
Location:	**Date:**	**Currency Used:**	**One U.S. Dollar =**

Selected for:_____
Data collected from: Medical Records ?
Patient Registry ?

Is an official manual of treatment guidelines available? Yes ? No ?
If yes, what year published?_____
Are IMCI guidelines available? Yes ? No ?

En-counter Num-ber	**Age (mon-ths)**	**Sex (M/F)**	**Diagnosis/ Symptoms**	**Date**	**Prescriber Type**	**Drug Name and Strength**	**Dosage Form**	**Dosage Quan-tity**	**Fre-quency (times/ day)**	**Dura-tion of Treat-ment (days)**	**Drug Retail Outlet**	
											Pack Size	**Pack Price**
Col. 1	**Col. 2**	**Col. 3**	**Col. 4**	**Col. 5**	**Col. 6**	**Col. 7**	**Col. 8**	**Col. 9**	**Col. 10**	**Col. 11**	**Col. 12**	**Col. 13**
1	26	F	Diarrhea	7/99	Nurse	ORS 27.9gm	Liquid	150ml	6	2	1 liter	0.35

DUS-1: Use with indicators 8, 9, 10, 11, 12, 13, 14, and 15.

DUS-2: Observation of Health Worker Data Form

This form is used for the indicators listed below:

18. Percentage of encounters where health workers asked one or more clinical questions from IMCI guidelines to determine severity of health problem

19. Percentage of health workers who provided basic information to caregivers on how to give the recommended drug(s)

20. Percentage of health workers who told caregivers about any signs of progressive illness and recommended a visit to a doctor or clinic if the signs appear

Note: Some of the data collected on DUS is cross-referenced with WHO IMCI Assessment of Health Worker Skills Indicators 1-5.

Data Summary:

Where to Go	*Whom to Ask*	*What to Get*
MOH health facilities	Health facility supervisor for permission to observe. Also, briefly explain your purpose to the practitioner you want to observe.	Data from observing 10 to 15 encounters with children two months to five years old for any curative health problem in each health facility

General Instructions for Filling Out Data Forms:

Facility Name: Write the name of the health facility in which the data are being collected.

Data Collector Code: Write your identification code. Codes will be assigned during data collector training.

Facility Type: Write the type of facility in which you collect the data, for example, warehouse, district hospital, health center, or health post.

Location: Write the name of the geographic location of the facility, usually the name of a region, province, district, city, or town.

Date: Write the date on which you collect the data. At each facility, the data should be collected in one day, if possible.

Encounter Number: Write the patient's identification number. If no identification exists, simply number the encounter (patient) records that you studied *1, 2, 3,* etc.

Length of Consultation (min): Write in the amount of time, in minutes, that the health worker spent with the caregiver and the child.

Diagnosis: Write the diagnosis as determined by the prescriber. If you cannot hear the diagnosis made during the medical consultation, ask the health worker about the diagnosis after the caregiver and patient have left the consultation room.

Age (months): Write the actual age, in months, of the patient on the day of the medical consultation.

Sex (M/F): Indicate the patient's sex by writing an *M* for male or *F* for female.

Reason for consultation: Check the reason for the child's consultation. Check all that apply.

Instructions for Filling Out Form DUS-2:

Note: Use one copy of form DUS-2 per patient encounter.

A. **Table 1:** For each item, check *Yes* if the health worker addressed the topic with the caregiver. If the topic was not addressed during the consultation, check *No*. The topics may be addressed in any order.

B. **Table 2:** The name of each column is in **bold** below. The numbers correspond to the column numbers on the table.

1. **Drug Name, Strength, and Dosage Form:** Write the name, strength, and dosage form of each prescribed drug. Write the name of the drug exactly as it is told to the caregiver by the health worker, for example, amoxicillin (generic name) or Clamoxil (brand name). Also, write the strength of the drug prescribed by the health worker, for example, 250 mg/5 ml or 20%. If strength is not mentioned, write *N/A* (*not available*) after the name of the medication. Then write the dosage form of the

prescribed drug, for example, tablet, capsule, liquid, injectable, inhaler, cream, ointment, etc. If the health worker does not mention dosage form, write *N/A* (*not available*). Use a new row for each drug prescribed. Examples of a complete record are amoxicillin 250 mg/5 ml suspension, amoxicillin 250 mg tab, or amoxicillin 250 mg N/A.

2. **Dosage Quantity:** Write the quantity or unit of each prescribed drug exactly as the health worker prescribes, for example, 5 ml, 1 gm, 3 mg, 2 capsules, 2 inhalations, 1 tablet, etc. If dosage is not mentioned, write *N/A* (*not available*) in *Column 2*. Use a new row for each drug.

3. **Frequency:** For each drug prescribed, write how many times a day the dosage is to be given, for example, once a day, twice a day, three times a day, etc. If frequency is not mentioned, write *N/A* (*not available*) in *Column 3*. Use a new row for each drug.

4. **Duration of Treatment (days):** Write the number of days the prescribed drug is to be given for a full course of treatment. Write exactly what the health worker says. The duration could be expressed as 5 days, 10 days, 30 days, etc. If duration is not mentioned, write *N/A* (*not available*) in *Column 4*. Use a new row for each drug.

5. **Instructions:** Write exactly what the health worker mentions to the caregiver on how to administer the drug to the child. Instructions can be expressed as after meals, with water, etc. If instructions are not mentioned, write *N/A* (*not available*) in *Column 5*.

C. **Did the health worker explain to the caregiver how to give the medication?**

Check *YES* if the health worker explained to the caregiver how to give the medication to the child. Check *NO* if the health worker did not explain how to give the medication.

D. **Did the health worker ask the caregiver to repeat the instructions to verify understanding?**

If the answer to question C above is *YES*, then check *YES* for question D if the health worker asked the caregiver questions about the treatment to verify the caregiver's understanding of the prescribed treatment. Check *NO* if such questions were not asked.

Note: ALL unshaded blanks should be filled in on this data form. Enter *N/A* if data for a particular item are not available.

INSTRUCTIONS FOR TEAM MANAGER'S SECTIONS

The team manager for each data collection team will complete the shaded portions of form DUS-2 Table 1 as follows:

Shaded Row 1: **Did the health worker ask a significant question to determine the severity of the disease?** Check *Yes* if at least one of the items under question 1 is checked *Yes* by the data collector. Check *No* if none of the items under question 1 are checked *Yes* by the data collector.

Shaded Row 2: **Did the health worker examine in accordance with the reason for consultation?** Check *Yes* if at least one of the items under question 2 is checked *Yes* by the data collector. Check *No* if none of the items under question 2 are checked *Yes* by the data collector.

Shaded Row 3: **Did the health worker advise the caregiver about the signs of progressive illness?** Check *Yes* if at least one of the items under question 3 is checked *Yes* by the data collector. Check *No* if none of the items under question 3 are checked *Yes* by the data collector.

DUS-2: Observation of Health Worker Data Form [page 1 of 2]

Facility Name:	**Data Collector Code:**	**Facility Type:**	
Location:	**Date:**	**Encounter Number:**	
Length of Consultation (min):	**Diagnosis:**	**Age:**	**(M/F):**

Reason for consultation: diarrhea ?
fever ?
respiratory infection ?

A. For each item, check (✓) *YES* if the health worker addressed the topic with the caregiver. If the topic was not addressed during the consultation, check *NO.* The wording and order of the topics may vary.

Table 1	**Yes**	**No**
1. Asked if the child:		
Is able to drink or breastfeed		
Vomits everything		
Has convulsions or attacks		
Is lethargic		
Was unconscious		
2. Examined child in accordance with caregiver's reason for consultation:		
Examined ears		
Examined chest (counted RPM or listened with phonendoscope)		
Examined skin		
Took temperature		
3. Told the caregiver to bring child back to the clinic if:		
Observed urgent/worsening signs/symptoms		
Child can not breastfeed		
Child has fever		
Child has rapid respiration or difficulty breathing		
Child has blood in feces		
4. Requested a vaccination card		
5. Checked weight against a growth chart		
6. Counseled on feeding		
Row 1: Did the health worker ask a significant question to determine severity of the disease? Yes ? **No** ?		
Row 2: Did the health worker examine in accordance with the reason for consultation? Yes ? **No** ?		
Row 3: Did the health worker advise the caretaker about the signs of progressive illness? Yes ? **No** ?		

DUS-2 [page 2 of 2]	Facility Name:	Data Collector Code:

B. For each drug that the health worker gives to or prescribes for the child, write down the following information.

Table 2

Drug Name, Strength, and Dosage Form	Dosage Quantity	Frequency	Duration of Treatment (Days)	Instructions
Col. 1	**Col. 2**	**Col. 3**	**Col. 4**	**Col. 5**
Paracetamol 100 MG Tablet	1 Tablet	2 times a day	3	N/A

C. Did the health worker explain to the caregiver how to give the medication? YES ? NO ?

D. Did the health worker ask the caregiver to repeat the instructions to verify understanding? YES ? NO ?

DUS-2: Use with indicators 18, 19, 20. Data collectors should not fill out the shaded rows.

DUS-3: Exit Poll Interview Form

This form is used for the indicators listed below:

16. Percentage of prescribed drugs actually dispensed

17. Percentage of caregivers who could correctly describe how to give the prescribed medication

Data Summary:

Where to Go	*Whom to Ask*	*What to Get*
MOH health facilities	Health facility supervisor for permission to observe and interview	Data from interviews with 10 to 15 caregivers whose consultations of their child two months to five years old were observed.

General Instructions for Filling Out Data Forms:

Facility Name: Write the name of the health facility in which the data are being collected.

Data Collector Code: Write your identification code. Codes will be assigned during data collector training.

Facility Type: Write the type of facility in which you collect the data, for example, district hospital, health center, or health post.

Location: Write the name of the geographic location of the facility, usually the name of a region, province, district, city, or town.

Date: Write the date on which you collect the data. At each facility, the data should be collected in one day, if possible.

Encounter Number: Write the patient's identification number. If no identification exists, simply number the encounter (patient) records that you studied *1, 2, 3,* etc.

Interview Number: To keep track of the caregivers interviewed, use a number for each exit poll interview. DO NOT USE THE NAME OF THE PERSON BEING INTERVIEWED. Write the number of the interview (from 1 to 15) per survey site. In each health center start numbering at 1.

Chief Complaint: Write the chief complaint or the name of the illness for which the caregiver brought the child to the health center.

Age (months): Write the actual age, in months, of the patient on the day of the medical consultation.

Sex (M/F): Write the patient's sex by writing an *M* for male or *F* for female.

Instructions for Filling Out Form DUS-3:

After the caregiver visits the pharmacy or dispensing unit, ask the caregiver the following questions. If the clinic does not have a pharmacy or dispensing unit, approach the caregiver immediately before or after the caregiver leaves the clinic (depending on the layout of the clinic). Use a new copy of form DUS-3 for each interview.

"What drugs were prescribed and how are you going to give the drugs to your child?"

Fill out the table with the answers the caregiver provides. The name of each column on the form is in **bold** below. The numbers correspond to the column numbers on the data form.

Note: Record caregiver's knowledge of each drug prescribed even if not yet dispensed.

1. **Name of Drug:** Write the name of each prescribed drug exactly as indicated by the caregiver, for example, amoxicillin (generic name) or Clamoxil (commercial name). The data collector should *not* read the prescription; the *caregiver* should read the prescription for this information. Use a new row for each drug prescribed.

2. **Dosage Quantity:** Write the caregiver's version of the quantity or unit amount of each drug prescribed for the child. Write exactly what is stated by the caregiver, for example, one tablet, two tablets, one teaspoon (tsp), a vial, half the jar, one application, etc. If the dosage is not mentioned, ask the caregiver if he/she knows how much of the drug to give the child. If the caregiver does not know, write *DNK* (*does not know*).

3. **Frequency:** Write how many times a day the drug must be taken, as remembered by the caregiver. For each drug prescribed, write exactly what the caregiver recalls of the number of times a day the dose is to be given. The frequency can be expressed as once a day, twice a day, three times a day, etc. If frequency is not mentioned, ask the caregiver if he/she knows how often to give the drug each day. If the caregiver does not know write, *DNK* (*does not know*).

4. **Duration of Treatment (days):** For each drug, write what the caregiver recalls as the number of days the drug should be given to the child. Write exactly what the caregiver mentions. The duration could be expressed as 5 days, 10 days, 30 days, or until the drug is finished, etc. If duration is not mentioned, ask the caregiver if he/she knows how many days the child should be given the drug. If the caregiver does not know, write *DNK* (*does not know*).

5. **Instructions:** Write how the caregiver will administer the drug to the child. Write exactly what the caregiver says. Instructions can be expressed as after meals, with water, etc. If the caregiver does not know, write *DNK* (*does not know*).

6. **Did the caregiver receive the drugs?** For those caregivers who presented a prescription for dispensing, write *YES* if the caregiver actually has the drug in hand and *NO* if the caregiver only has a prescription order to be filled. Provide a response for each individual drug or prescription for a drug in the caregiver's possession.

INSTRUCTIONS FOR STUDY ORGANIZER COLUMN

7. **Was the antibiotic dispensed correctly?** The study organizer should mark *YES* or *NO***,** based on the criteria in indicator 24—that the required quantity to complete the standard course of therapy, as well as the correct drug, dosage strength, and regimen were provided.

INSTRUCTIONS FOR TEAM MANAGER'S SECTIONS

The team manager for each data collection team will complete the shaded portions of form DUS-4 as follows:

Shaded Row 1: Count the total number of drugs prescribed for the child in *Column 1* at the time of the visit, and record in *Row 1*.

Shaded Row 2: For all the drugs prescribed in *Column 1*, note if the information in *Column 2* through *Column 5* (*dosage quantity, frequency, duration of treatment,* and *instructions*) are filled out. If all columns are filled out for all drugs listed in *Column 1*, check *YES* in *Row 2*. Otherwise, check *NO* in *Row 2*.

Shaded Row 3: Count the number of *YES* responses in *Column 6* and record the number in *Row 3*. This is the total number of drugs dispensed to or received by the caregiver.

DUS-3: Exit Poll Interview Form [page 1 of 1]

Facility Name:		**Data Collector Code:**	
Facility Type:	**Location:**	**Date:**	**Encounter Number:**
Interview Number:	**Chief Complaint:**	**Age (months):**	**Sex (M/F):**

Ask the caregiver: **"What drugs were prescribed and how are you going to give the drugs to your child?"**

Name of Drug	Dosage Quantity	Frequency	Duration of Treatment (days)	Instructions	Did the caregiver receive the drug? YES/NO	Was the antibiotic dispensed correctly? YES/NO
Col. 1	**Col. 2**	**Col. 3**	**Col. 4**	**Col. 5**	**Col. 6**	**Col. 7**
Paracetamol	1 Tablet	2 times a day	3	with water	NO	
Row 1: Total # of drugs prescribed_____						
Row 2: Can caregiver correctly describe how to give prescribed medications? YES ? NO ?						
Row 3: Total # of drugs dispensed____						

DUS-3: Use with indicators 16 and 17. Data collectors should not fill out shaded areas.

DUS-4A-C: Simulated Purchase Data Forms

These forms are used for the indicators listed below:

9. Percentage of encounters diagnosed as no-pneumonia (cough or cold) that are prescribed antibiotics

11. Percentage of encounters diagnosed as diarrhea that are prescribed ORS

12. Percentage of encounters diagnosed as diarrhea that are prescribed antidiarrheals

13. Percentage of encounters diagnosed as non-dysentery/non-cholera diarrhea that are prescribed antibiotics

14. Percentage of encounters diagnosed as malaria that are prescribed an appropriate oral antimalarial, according to treatment guidelines

General Instructions for Filling Out Data Forms:

Facility Name: Write the name of the drug retail outlet in which the data are being collected.

Data Collector Code: Write your identification code. Codes will be assigned during data collector training.

Location: Write the name of the geographic location of the pharmacy, usually the name of a region, province, district, city, or town.

Date: Write the date on which you collect the data. At each facility, the data should be collected in one day, if possible.

Currency Used: Write in the currency used for the price data for the drugs purchased.

One U.S. Dollar: Write in the exchange rate for a U.S. dollar in the currency used.

Instructions for Filling Out Forms DUS-4A-C:

For detailed instructions, see Scenarios for Simulated Purchases following the DUS-4 forms. These data forms should be completed immediately after the simulated purchase. This will facilitate remembering the interactions during the purchase. It will also help ensure that retail drug sellers do not realize that they are being evaluated.

A. **Which of the following questions did the drug seller ask before recommending a treatment?**
Make a check mark (✓) in the box beside each question that the drug seller asked.

B. **Which drugs were recommended for purchase by the drug seller?**
Record information on each drug recommended for purchase during the simulated purchase encounter. The name of each column on the table is in **bold** below. The numbers correspond to the column numbers on the table.

1. **Name, Strength, and Dosage Form:** Write the name, strength, and dosage form of each purchased drug. Write the name of the drug that the retail drug seller gives, for example, amoxicillin (generic name) or Clamoxil (commercial name). Also, write in the strength of the drug prescribed by the drug seller, for example, 250 mg/5 ml or 20%. If strength is not mentioned, write *N/A* (*not available*) after the name of the medication. Write the dosage form of the prescribed drug, for example, tablet, capsule, liquid, injectable, inhaler, cream, ointment, etc. If the drug seller does not mention dosage form, write *N/A* (*not available*). Use a new row for each drug purchased. An example of a complete record is: amoxicillin 250 mg/5 ml suspension or amoxicillin 250 mg tab or amoxicillin 250 mg N/A.

2. **Dosage Quantity:** For the quantity or unit of each drug purchased, write exactly what the drug seller dispensed. For example, 5 ml, 1 gm, 3 mg, 2 capsules, 2 inhalations, 1 tablet, etc. Use a new row for each drug.

3. **Frequency:** For each drug purchased, write the number of times a day that the drug seller told you the dose was to be taken, for example, once a day, twice a day, three times a day, etc. If frequency is not mentioned, write *N/A* (*not available*) in *Column 3*. Use a new row for each drug.

4. **Duration of Treatment (days):** Write the number of days the purchased drug is to be taken for a full course of treatment. Write exactly what the drug seller says. The duration could be expressed as 5 days, 10 days, 30 days, etc. If duration is not mentioned, write *N/A* (*not available*) in *Column 4*. Use a new row for each drug.

5. **Instructions:** For how to administer the drug to the child, write exactly what the drug seller says to the caregiver. Instructions can be expressed as after meals, with water, etc. If instructions are not mentioned by the drug seller, write *N/A* (*not available*) in *Column 5*.

6. **Price Paid:** For each drug recommended for purchase by the drug seller, record the price paid for the drug.

C. **Which of the following recommendations were made?**
Make a check mark (✓) beside each recommendation made by the drug seller.

INSTRUCTIONS FOR TEAM MANAGER'S SECTIONS

The team manager for each data collection team will complete the shaded portions of forms DUS-4A-C as follows:

Shaded Row 1: **Did dispenser assess the severity of the problem?** Check *YES* if two or more of the items above the question are checked by the data collector. Otherwise check *NO*.

Shaded Row 2: **Did dispenser provide basic information on how to take the drugs?** For all the drugs recommended in *Column 1*, note if the information in *Column 2* through *Column 5* (*dosage quantity, frequency, duration of treatment* and *administration*) are filled out. If any of the information for *Columns 2-5* is provided for the drug listed in *Column 1*, check *YES* in *Row 2*. Otherwise, check *NO* in *Row 2*.

Shaded Row 3: **Did dispenser give advice on signs of progressive illness?** Check *YES* if two or more of the items above the question are checked by the data collector. Otherwise check *NO*.

DUS-4A: Simulated Purchase Form for No-Pneumonia (Cough or Cold) in Private Pharmacies [page 1 of 2]

Facility Name:		**Data Collector Code:**	
Location:	**Date:**	**Currency Used:**	**One U.S. Dollar =**

A. Check (✓) which of the following questions were asked by the drug seller before recommending a treatment.

Is there noise or hoarseness in the child's chest?		Has the child taken medication?	
Is there blood in the sputum?		Can the child drink liquid?	
Does the child have rapid respiration?		Can the child take in food?	
Is the child vomiting?		Does the child have a fever?	
Is the child very sleepy?		Other:	
Row 1: Did dispenser assess the severity of the problem? YES ? NO ?			

B. For all drugs recommended for purchase by the drug seller, write the following information.

Name, Strength, and Dosage Form	**Dosage Quantity**	**Frequency**	**Duration of Treatment (days)**	**Instructions**	**Price**
Col. 1	**Col. 2**	**Col. 3**	**Col. 4**	**Col. 5**	**Col. 6**
Amoxicillin 25 MG/ML Susp.	5 ML	3 times a day	5	before food	.60
Row 2: Did dispenser provide basic information on how to take the drugs? YES ? NO ?					

DUS-4A [page 2 of 2]	**Facility Name:**	**Data Collector Code:**

C. Check (✓) which of the following recommendations were made by the drug seller.

Visit a doctor or clinic if the child has difficulty breathing		Visit a doctor or clinic if the child becomes very sleepy	
Visit a doctor or clinic if the child has rapid respiration		Clean the child's nose if it is congested	
Visit a doctor or clinic if the child has a high fever		Continue breastfeeding the child often (<2 years)	
Visit a doctor or clinic if the child cannot take food		Give the child more fluids than usual	
Visit a doctor or clinic if the child's condition gets more serious		Other:	
Row 3: Did dispenser give advice on signs of progressive illness? YES ? **NO** ?			

DUS-4A: Use with indicator 9. Data collectors should not fill out shaded areas.

DUS-4B: Simulated Purchase Form for Diarrhea in Private Pharmacies [page 1 of 2]

Facility Name:		**Data Collector Code:**	
Location:	**Date:**	**Currency Used:**	**One U.S. Dollar =**

A. Check (✓) which of the following questions were asked by the drug seller before recommending a treatment.

What is the frequency of the child's bowel movements?		Does the child have stomach cramps?	
Is there blood in the feces?		Has the child taken medication?	
Does the child have a fever?		Can the child drink liquid?	
Is the child depressed or lethargic?		Can the child take in food?	
Is the child vomiting?		Other:	
Row 1: Did dispenser assess the severity of the problem? YES ? **NO** ?			

B. For all drugs recommended for purchase by the drug seller, write the following information.

Name, Strength, and Dosage Form	**Dosage Quantity**	**Frequency**	**Duration of Treatment (days)**	**Instructions**	**Price**
Col. 1	**Col. 2**	**Col. 3**	**Col. 4**	**Col. 5**	**Col. 6**
Metronidazole 25 MG/ML syrup	2 ML	4 times a day	5	with water	.60
Row 2: Did dispenser provide basic information on how to take the drugs? YES ? **NO** ?					

DUS-4B [page 2 of 2]	**Facility Name:**	**Data Collector Code:**

C. Check (✓) which of the following recommendations were made by the drug seller.

Visit a doctor or clinic if diarrhea persists		Continue giving liquids and food	
Visit a doctor or clinic if the child starts vomiting		Continuing breastfeeding often (< 2 years)	
Visit a doctor or clinic if the child has a fever		Give the child more liquids than usual	
Visit a doctor or clinic if the child gets lethargic		Other:	
Row 3: Did dispenser give advice on signs of progressive illness? YES ? NO ?			

DUS-4B: Use with indicators 11, 12, and 13. Data collectors should not fill out shaded areas.

DUS-4C: Simulated Purchase Form for Malaria in Private Pharmacies [page 1 of 2]

Facility Name:		**Data Collector Code:**	
Location:	**Date:**	**Currency Used:**	**One U.S. Dollar =**

A. Check (✓) which of the following questions were asked by the drug seller before recommending a treatment.

Does the child have watery bowel movements?		Can the child drink liquid?	
Does the child have a fever?		Can the child take in food?	
Is the child depressed or lethargic?		Other:	
Is the child vomiting?		Other:	
Has the child taken medication?		Other:	
Row 1: Did dispenser assess the severity of the problem? YES ? NO ?			

B. For all drugs recommended for purchase by the drug seller, write the following information.

Name, Strength, and Dosage Form	**Dosage Quantity**	**Frequency**	**Duration of Treatment (days)**	**Instructions**	**Price**
Col. 1	**Col. 2**	**Col. 3**	**Col. 4**	**Col. 5**	**Col. 6**
Chloroquine 10 MG/ML syrup	10 ML	1 time a day	3	with food	.70
Row 2: Did dispenser provide basic information on how to take the drugs? YES ? NO ?					

DUS-4C [page 2 of 2]	**Facility Name:**	**Data Collector Code:**

C. Check (✓) which of the following recommendations were made by the drug seller.

Visit a doctor or clinic if diarrhea persists		Continue giving liquids and food	
Visit a doctor or clinic if the child starts vomiting		Continuing breastfeeding often (< 2 years)	
Visit a doctor or clinic if the child's fever persists		Give the child more liquids than usual	
Visit a doctor or clinic if the child gets lethargic		Other:	
Row 3: Did dispenser give advice on signs of progressive illness? YES ? **NO** ?			

DUS-4C: Use with indicator 14. Data collectors should not fill out shaded areas.

Scenario for Simulated Purchases: No-Pneumonia (Cough or Cold)

Present yourself as the caregiver of a two-year-old child who has been suffering from a cold for two days. Use local terms to describe the symptoms of the child. Request advice regarding which products to give the child. Do not provide additional information unless directly asked for more information. Purchase the drugs recommended by the retail drug seller and leave the shop.

If the drug seller asks these questions, reply as follows:

> *The condition of the child:* Say the child is a little tired, with a slight fever, the child plays but tires easily, the child eats and drinks normally, but has a runny nose with clear discharge.
>
> *Description of the cough:* Say that the respiration is noisy and that the child has a mild cough. There is no vomiting after the cough.
>
> *If the child took medication:* Say that the child has not taken medication.

Actions

Notice and remember the following (you can ask the drug seller to repeat information):

- Whether the drug seller asked questions regarding the child's condition before making a treatment recommendation
- Whether the drug seller gave instructions on how to administer the medication
- Whether the drug seller told you about the warnings associated with the product
- Whether the drug seller gave other advice or information on how to care for the child and treat the cold episode
- The name(s) of the product(s) recommended to purchase

This information should be written on data form DUS-4A after exiting and leaving the area, but before conducting the next simulated purchase.

Scenario for Simulated Purchases: Diarrhea

Present yourself as the caregiver of a two-year-old child who has had diarrhea for two days. Use local terms to describe the symptoms of the child. Request advice. Ask which products are best for the child. Do not provide additional information unless directly asked for more information. Purchase the drugs recommended by the retail drug seller and leave the shop.

If the drug seller asks these questions, reply as follows:

> *The condition of the child:* Say the child is a little tired, with a stomach ache and diarrhea, but without fever or vomiting.
>
> *Diarrhea episodes:* Say that the child has daily episodes of four to five loose, watery stools, without blood.
>
> *If the child ate something out of the ordinary or took medication:* Say that the child did not eat anything unusual or take medication.

Actions

Note the following (you can ask the drug seller to repeat information):

- Whether the drug seller asked questions regarding the child's condition before making a treatment recommendation
- Whether the drug seller gave instructions on how to administer the medication
- Whether the drug seller told you about the warnings associated with the drug
- Whether the drug seller gave other advice or information on how to care for the child and treat the diarrhea episode
- The name(s) of the product(s) recommended to purchase

This information should be written on data form DUS-4B after exiting and leaving the area, but before conducting the next simulated purchase.

Scenario for Simulated Purchases: Malaria

Present yourself as the caregiver of a two-year-old child who has had a fever for the last two days. Use local terms to describe the symptoms of the child. Request advice regarding which products to give the child. Do not provide any additional information unless directly asked for more information. Purchase the drugs recommended by the retail drug seller and leave the shop.

If the drug seller asks these questions, reply as follows:

> *The condition of the child:* Say the child does not having a cough or any other symptoms, but has a fever. The child is moving around less and seems dizzy at times.
>
> *If the child took medication:* Say that the child has not taken other medication.

Actions

Notice and remember the following (you can ask the drug seller to repeat information):

- Whether the drug seller asked questions regarding the child's condition before making a treatment recommendation
- Whether the drug seller gave instructions on how to administer the medication
- Whether the drug seller told you about the warnings associated with the product
- Whether the drug seller gave other advice or information on how to care for the child and treat the fever episode
- The name(s) of the product(s) recommended to purchase

This information should be written on data form DUS-4C after exiting and leaving the area, but before conducting the next simulated purchase.

Troubleshooting

Drug Use Study: Illustrative Examples of Potential Problems and Possible Solutions

Potential Problems	Possible Solutions
Fewer than 30 medical records exist for each health problem studied (no-pneumonia, pneumonia, diarrhea, malaria).	Collect as many records as available and build in a process of either asking the team leader for advice or going to a predetermined back-up facility
The specific diagnosis is not on the medical records.	Before beginning the review of patient records, the study team should meet with health facility managers and health workers to define a list of local terms or symptoms that are equivalent to each health problem studied. This should be part of the process for testing the data instruments and methodology. The team should develop (and reach consensus) on a master list of possible symptoms that can be used to describe a particular diagnosis. The list can help identify patient encounters for diarrhea, pneumonia, no-pneumonia (cough or cold), and malaria.
In rural areas, insufficient numbers of drug retail outlets are near the sampled health facility.	Use proportional sampling, so that more sampled drug retails outlets are concentrated in urban areas.
Health facility managers are skeptical, or they resist the idea of someone observing medical consultations.	Sometimes having an "official government letter of authorization" may not be enough to gain the cooperation of managers. Talk with the managers about the study and point out its ultimate benefit to the country. Assure the manager that neither the names of staff nor those of patients will be used on the data forms and that the information collected will be shared with the managers.
Local drug retail outlet community has identified a data collector as a simulated purchaser.	Data collectors should do the simulated purchases as quickly as possible after they arrive in a particular geographic area. However, if word still gets out that surveyors are in town, change the time (or other logistics pattern) for purchases to be made, or switch the list of outlets with a team member.

Potential Problems	Possible Solutions
Data collectors do not have enough money to make the simulated purchases.	As part of testing the data instruments and the simulated purchases scenarios, estimate the cost of local products in drug retail outlets and factor the cost into the budget for local expenses by data collectors. Build in a process to reimburse data collectors for purchases that exceed the estimate. Make sure that reimbursement is contingent upon returning with the products and the receipt.
Prescribed drugs are recorded by brand names that are unfamiliar to the data collectors.	Information should be written on the data forms exactly as written in the patient encounter record, even if the terms are unfamiliar to the data collector. Data collectors should not use their own interpretations of the information.
Prescribed drugs are identified, but numbers of units are not.	The data needed for a particular patient encounter may not be in the same record source. Start with the patient register, then move to the medical records. If drug data are still missing, see if the facility has pharmacy or dispensing records. If all else fails, ask the staff, during the completion of the medical personnel questionnaire, how many units of each drug they would normally provide for a child of that age, with the symptom(s) listed in the record. Then write this information on the form, but draw a circle around it. The circle means that information missing from the record came from an interview.
Data forms are incomplete and/or illegible.	Be sure to use pens, not pencils, to fill out the forms. They will be checked later, and your pay may depend upon the legibility and completeness of your forms.
Patients are “lost” between observation and exit poll, sometimes due to admittance to hospital.	Increase number of patients to be observed to ensure an adequate sample size.

ANNEXES

Annex 1. Acceptable Terms for Diagnosing Diarrhea, Pneumonia, No-Pneumonia, and Malaria

This annex should be used to record agreed upon terms to look for in the medical records to indicate a case of each of the study health problems listed below. It should be completed in consultation with the study organizer(s) prior to the start of data collection.

DIARRHEA:

PNEUMONIA:

NO-PNEUMONIA:

MALARIA:

Annex 2. List of Equivalent Drugs (Brand and Generic)

This annex should be used to record the list of which medications are to be counted as antibiotics. This list should be completed in consultation with the study organizer(s) prior to the start of data collection. However, to avoid confusion or the need for interpretation by data collectors, all drugs prescribed should be transcribed exactly as listed in the patient record to the data collection forms.

Annex 3. Medical Record Selection Form

This form is intended to help data collectors keep track of the medical record selection process in each facility. Record the identifying code for each medical record selected under each health problem. At least three medical records per month for the IMCI health problem under study should be selected, for the most recent 12 months prior to the time of the study. Start with the most recent full month and work backwards (e.g., October 1998, September 1998, August 1998, etc.).

Facility Name	**Data Collector's Code:**		
Month	**DIARRHEA**	**NO-PNEUMONIA**	**PNEUMONIA**
JANUARY _____			
FEBRUARY _____			
MARCH _____			

Month	DIARRHEA	NO-PNEUMONIA	PNEUMONIA
APRIL _____			
MAY _____			
JUNE _____			
JULY _____			
AUGUST _____			

Month	DIARRHEA	NO-PNEUMONIA	PNEUMONIA
SEPTEMBER _____			
OCTOBER _____			
NOVEMBER _____			
DECEMBER _____			

Annex 4. Indicators for Which Data Are Collected

1. Percentage of DMCI tracer drug products on the national drug formulary (NDF)/essential drugs list (EDL) [Data on this first indicator are collected at the central health level.]

2. Percentage of median international price paid for a set of DMCI tracer drugs that was part of the last regular MOH procurement

3. Average percentage of a set of unexpired DMCI tracer drugs available in MOH storage and health facilities

4. Average percentage of time out of stock for a set of DMCI tracer drugs in MOH storage and health facilities.

5. Average percentage of stock records that correspond with physical counts for a set of DMCI tracer drugs in MOH storage and health facilities

6. Percentage of MOH storage and health facilities visited that have a working refrigerator with freezing compartment and thermometer for vaccine storage

7. Percentage of MOH storage and health facilities with up-to-date refrigerator temperature monitoring records

8. Percentage of MOH health facilities visited with an official manual of treatment guidelines for childhood illnesses, based on WHO IMCI treatment guidelines

9. Percentage of encounters diagnosed as no-pneumonia (cough or cold) that are prescribed antibiotics

10. Percentage of encounters diagnosed as pneumonia that are prescribed appropriate antibiotics, according to treatment guidelines

11. Percentage of encounters diagnosed as diarrhea that are prescribed ORS

12. Percentage of encounters diagnosed as diarrhea that are prescribed antidiarrheals

13. Percentage of encounters diagnosed as non-dysentery/non-cholera diarrhea that are prescribed antibiotics

14. Percentage of encounters diagnosed as malaria that are prescribed an appropriate oral antimalarial, according to treatment guidelines

15. Average cost of drugs prescribed as a percentage of costs if IMCI norms for treatment were followed

16. Percentage of prescribed drugs actually dispensed

17. Percentage of caregivers who could correctly describe how to give the prescribed medication

18. Percentage of encounters where health workers asked one or more clinical questions from IMCI guidelines to determine severity of health problem

19. Percentage of health workers who provided basic information to caregivers on how to give the recommended drug(s)

20. Percentage of health workers who told caregivers about any signs of progressive illness and recommended a visit to a doctor or clinic if the signs appear

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